

Work Order ID 133172

Tuesday, May 26, 2015 12:49:40 PM

133172

Page 1

Item ID: D4895-045 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Fwd Outboard Beam Assembly
 Start Date: 5/26/15 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 5/26/15 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: ML3 Date: MAY 27 2015 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D4895	B

100

0.00

100

Waterjet

FLOW CNC Waterjet

Memo

0.00

CUT BLANK AS PER FILE D4895-5_BLANK

6061 1" x 12"

1 0 Jm15-5-28

110

0.00

110

HAAS 1

HAAS CNC vertical machine #1

Memo

0.00

MILL AS PER FOLIO FB331 AND DWG D4895

FOLIO REV: B

DWG REV: B

DEBURR

1 0 DAS 44 9-89 15/06/08

DAS 20 9-89 15-06-09

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			
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OTHER : ☐					

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WORK ORDER NON-CONFORMANCE / UPDATE

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Tuesday, May 26, 2015 12:49:40 PM

Item ID: D4895-045 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Fwd Outboard Beam Assembly
 Start Date: 5/26/15 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 5/26/15 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC7-Inspect Chemical Conversion Coat	0.00							
170									
QC	Memo	0.00							
Quality Control									
171	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
171									
Powdercoat	Memo 12/23/490	0.00							
Powder Coating	MASK HOLES AS PER NOTE 8								
	START TIME: 10:05								
	OVEN TEMPERATURE: 820°								
	FINISH TIME: 10:35								
172	QC3- Inspect Part Finish	0.00							
172									
QC	Memo	0.00							
Quality Control									

DAS
30
9-89

JUN 21 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
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OTHER : ☐																					

Work Order ID 133172

133172

Page 5

Tuesday, May 26, 2015 12:49:40 PM

Item ID: D4895-045

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Fwd Outboard Beam Assembly

Start Date: 5/26/15 Start Qty: 1.00

1

Cust Item ID:

Required Date: 5/26/15 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

QC21- Final Inspection - Work Order Release

0.00

210

QC

Memo

0.00

Quality Control

ML5

JUN 12 2015

ML5

JUN 12 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval 	
Description Work Order Deviation		Disposition			
				Completed By 	
				Lead hand / Supervisor Approval Verification 	
				QC / QA Coordinator Approval 	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Tuesday, May 26, 2015 12:49:40 PM

Page 1

Work Order ID: 133172

133172

Parent Item: D4895-045

D4895-045

Parent Item Name: Fwd Outboard Beam Assembly

Start Date: 5/26/15

Required Date: 5/26/15

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.07.25 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D4859-1		Manufactured	No				Each	18.0000	DAS 30 ** 9-89	4			
---------	--	--------------	----	--	--	--	------	---------	----------------------	---	--	--	--

D4859-1

Bushing

Location	Loc Qty	Loc Code
----------	---------	----------

ST132	18	
122987	16	
124826	2	

M6061T6B1.000X12.00	Purchased	No				f	37.8000						
---------------------	-----------	----	--	--	--	---	---------	--	--	--	--	--	--

0

M6061T6B1 000X12 000

6061-T6 Bar 1.00 x 12.00

Location	Loc Qty	Loc Code
----------	---------	----------

MAT007	37.8	
123649	0.8	
m115844	5	
M126351	1.5	
m130013	6.5	
m130527	24	

**

Jm15-5-28.

130527.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																															
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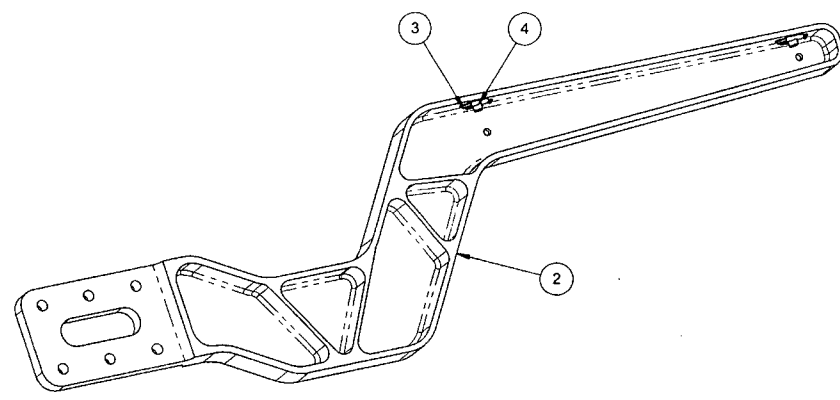
DART AEROSPACE LTD		Work Order: 133172
Description: Fwd Outboard Beam		Part Number: D4895-5
Inspection Dwg: D4895	Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
CNC Milling	32.55	+/-0.030	32.550	✓		SLOI	Tape
	R0.38	+/-0.030	.380	✓		Rad gauge	
	0.85	+/-0.030	.857	✓		SLO8	Vein
	0.93	+/-0.030	.906	✓		"	
	8.32	+/-0.030	8.314	✓		Height gauge	
	Ø0.425	+0.000/-0.002	.424	✓		gauge Pin	
	0.750	+/-0.010	.748	✓		SLO8	
	0.200	+/-0.010	.200	✓		"	
	R0.43	+/-0.030	.430	✓		Rad gauge	
	3.00	+/-0.030	3.000	✓		SLO8	
	3.50	+/-0.030	3.500	✓		"	
	0.15	+/-0.030	.148	✓		"	
	0.250	+/-0.010	.249	✓		"	
	5.75	+/-0.030	5.750	✓		"	
	1.34	+/-0.030	1.343	✓		Height gauge	
	1.00	+/-0.030	.997	✓		SLO8	
	R0.13	+/-0.030	.125	✓		Rad gauge	
	0.150	+/-0.010	.151	✓		SLO7	Mic
	1.15	+/-0.030	1.150	✓		SLO8	
	3.00	+/-0.030	2.998	✓		"	
	Ø0.377	+0.006/-0.001	.378	✓		"	
	3.50	+/-0.030	3.497	✓		"	
	1.75	+/-0.030	1.750	✓		"	
	3.600	+/-0.005	3.600	✓		"	
	1.800	+/-0.005	1.800	✓		"	
	0.80	+/-0.030	.797	✓		"	
	0.60	+/-0.030	.597	✓		"	
	2.300	+/-0.005	2.300	✓		"	
	Ø1.00	+/-0.030	1.000	✓		"	
Manual Mill	0.25	+/-0.030	.251	✓		"	
	5.50	+/-0.030	5.500	✓		"	
	12.000	+/-0.005	12.000	✓		SLOI	
	1.55	+/-0.030	1.547	✓		SLO8	
	Ø0.465 X 90°	+/-0.010 x 0.5°	.460 X 90°	✓		"	
	R0.25	+/-0.030	.250	✓		Rad gauge	
	0.500	+/-0.010	.501	✓		SLO8	

Measured by: DAG 15-06-09	Audited by: J.S. 15/06/10	Preliminary Approval:
Date: 15-06-09	Date: 15/06/10	Date:
Rev	Date	Change
A	14.08.05	New Issue
Revised by: KJ		Approved:

ITEM	QTY -041	P/N	DESCRIPTION
1	X	D4895-041	FWD OUTBOARD BEAM ASSY
2	1	D4895-1	FWD OUTBOARD BEAM
3	4	MS20426AD3-(5)	RIVET
4	2	MS21059-4	NUT PLATE



SHOP COPY
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 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 133-172-MCS
 15-05-27

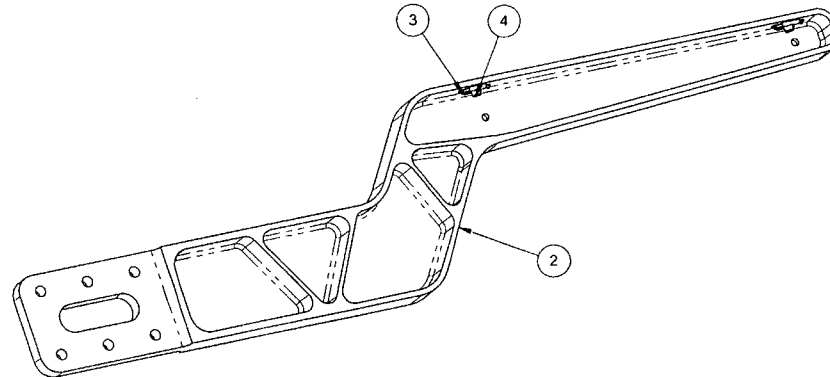
D4895-041 FWD OUTBOARD BEAM ASSY

RELEASED
 2014-07-24
md

- NOTES:
 1) MATERIAL: N/A
 2) FINISH: N/A
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
 7) WEIGHT: 3.31 lbs

APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D4895 TITLE OUTBOARD BEAM SCALE NTS DATE 14.04.11	
	DRAWN	RF		
	CHECKED	VS		
	MFG. APPR.	JLM		
	APPROVED	HS		
DE APPR.	DS			
REV.	DESCRIPTION		BY	DATE
B	ADD D4895-5/-7/-045/-047 (ZN A4-3, A4-4, A4-7, A4-8), ADD NOTE 9 (ZN A8-5, A8-6, A8-7, A8-8)		RF	14.04.11
A	NEW ISSUE		RF	13.05.24

ITEM	QTY -043	P/N	DESCRIPTION
1	X	D4895-043	AFT OUTBOARD BEAM ASSY
2	1	D4895-3	AFT OUTBOARD BEAM
3	4	MS20426AD3-(5)	RIVET
4	2	MS21059-4	NUT PLATE



D4895-043 AFT OUTBOARD BEAM ASSY

RELEASED
2014-07-24
mp

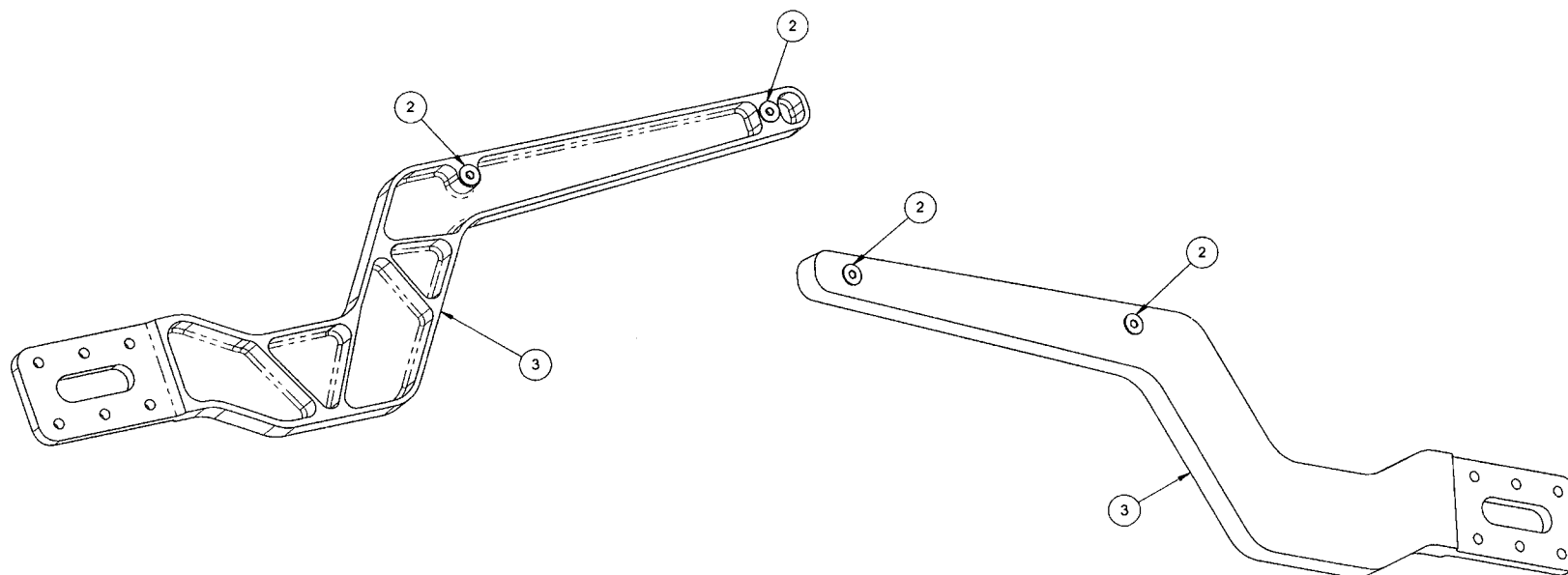
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 3.25 lbs

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO. D4895	REV. B
MFG. APPR.	JLM		SHEET 2 OF 9
APPROVED	HS	TITLE	SCALE
DE APPR.	DS-#	OUTBOARD BEAM	NTS
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ITEM	QTY -045	P/N	DESCRIPTION
1	X	D4895-045	FWD OUTBOARD BEAM ASSY
2	4	D4859-1	BUSHING
3	1	D4895-5	FWD OUTBOARD BEAM



D4895-045 FWD OUTBOARD BEAM ASSY

NOTES:

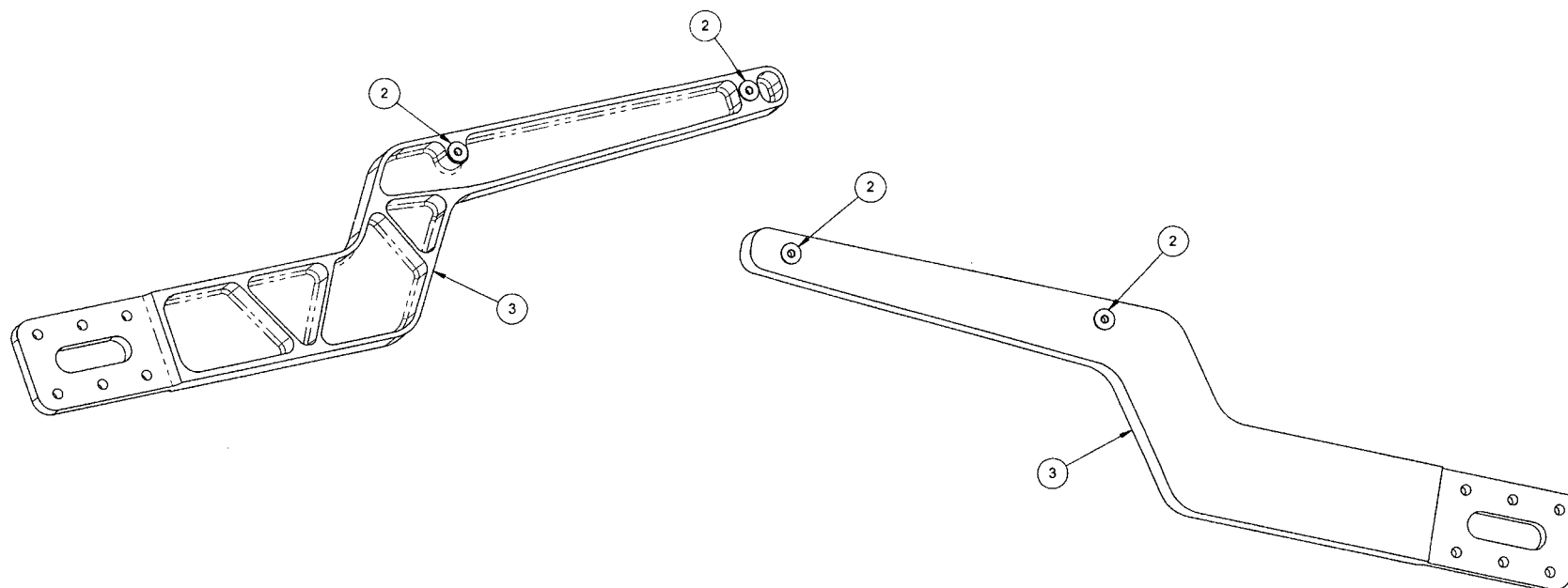
- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 3.50 lbs
- 8) PRESS FIT D4859-1 INTO D4895-5. IT IS ACCEPTABLE USE MAGNABOND ADHESIVE, REMOVE EXCESS ADHESIVE FROM BUSHING HOLE

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APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	RF		
	CHECKED	VS	DRAWING NO. D4895	REV. B
	MFG. APPR.	JLM	SHEET 3 OF 9	
	APPROVED	HS	TITLE OUTBOARD BEAM	SCALE NTS
	DE APPR.	DS	DATE 14.04.11	

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ITEM	QTY -047	P/N	DESCRIPTION
1	X	D4895-047	AFT OUTBOARD BEAM ASSY
2	4	D4859-1	BUSHING
3	1	D4895-7	AFT OUTBOARD BEAM



D4895-047 AFT OUTBOARD BEAM ASSY

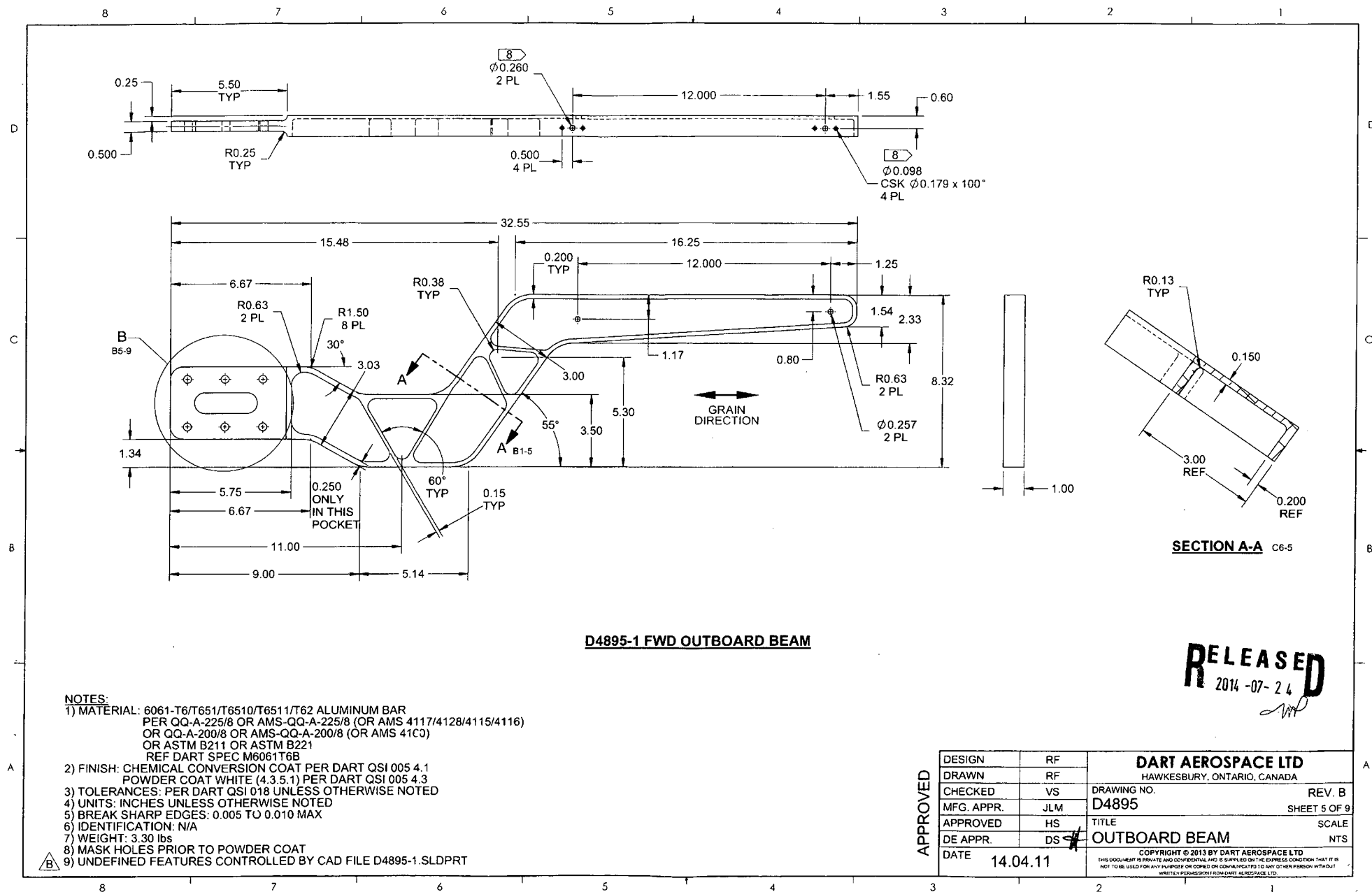
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 3.44 lbs
- 8) PRESS FIT D4859-1 INTO D4895-7. IT IS ACCEPTABLE USE MAGNABOND ADHESIVE, REMOVE EXCESS ADHESIVE FROM BUSHING HOLE

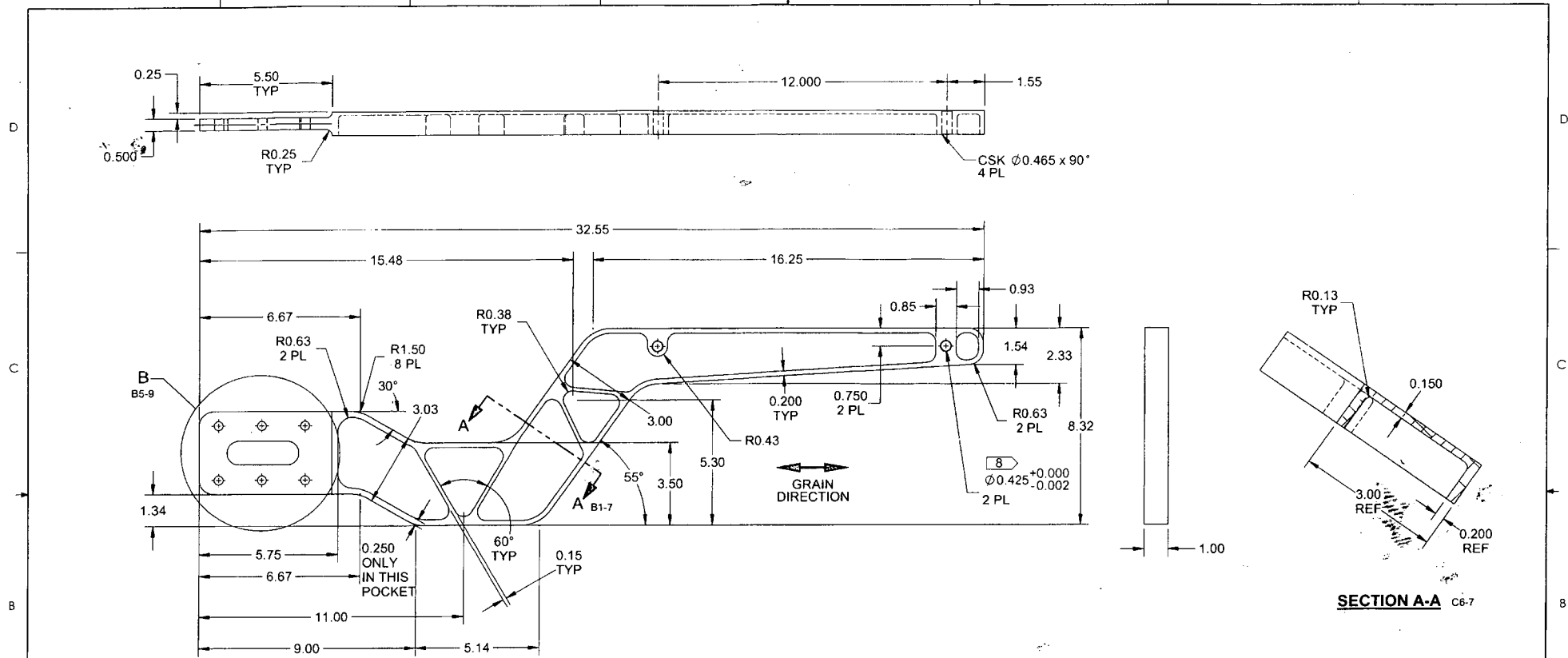
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DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO. D4895	REV. B
MFG. APPR.	JLM		SHEET 4 OF 9
APPROVED	HS	TITLE OUTBOARD BEAM	SCALE NTS
DE APPR.	DS		
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D4895-5 FWD OUTBOARD BEAM B

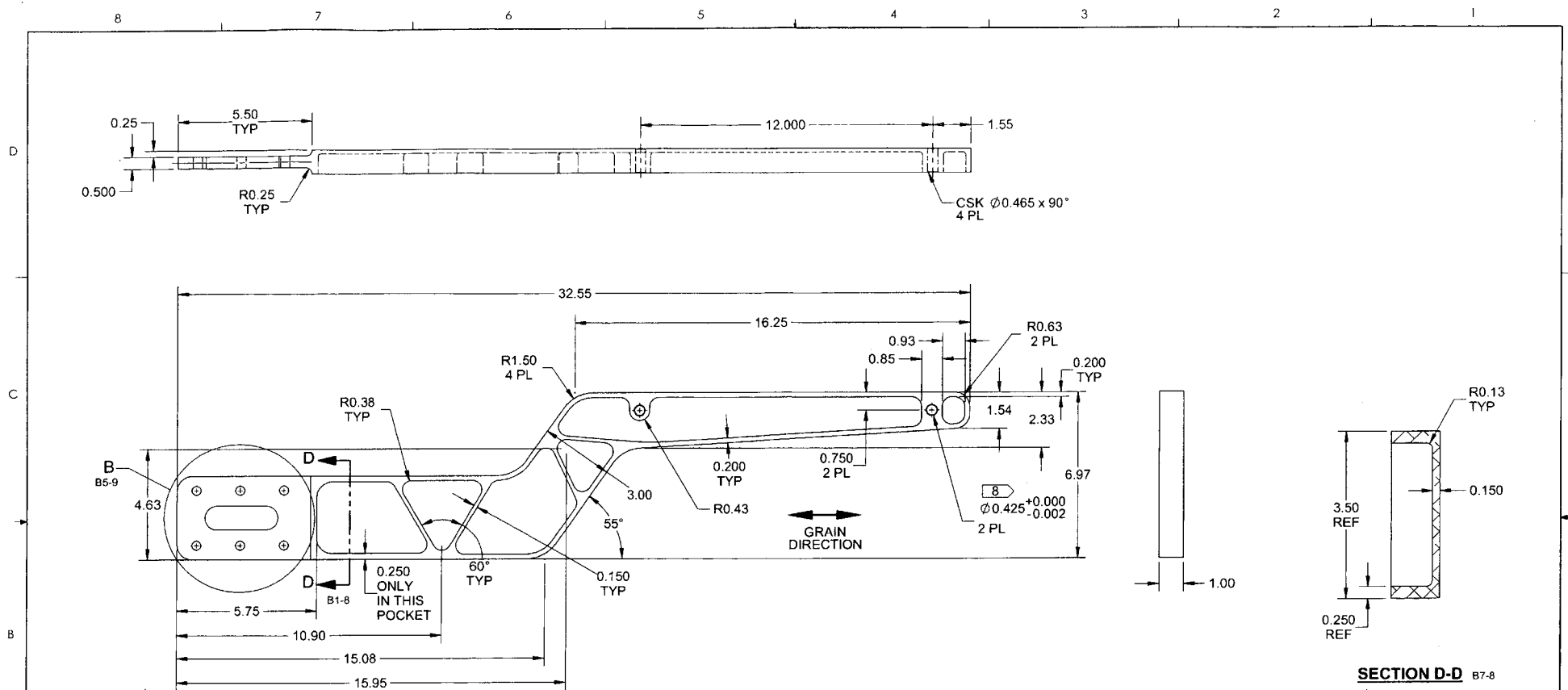
NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-20J/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 3.44 lbs
- 8) MASK HOLES PRIOR TO POWDER COAT
- 9) UNDEFINED FEATURES CONTROLLED BY CAD FILE D4895-5.SLDPRT

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DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO. D4895	REV. B
MFG. APPR.	JLM	SHEET 7 OF 9	
APPROVED	HS	TITLE OUTBOARD BEAM	SCALE NTS
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DATE	14.04.11		



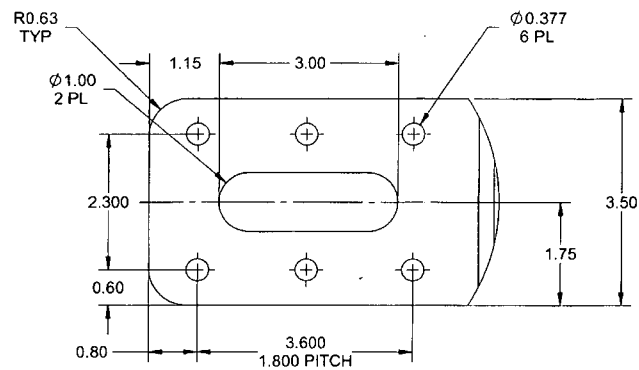
D4895-7 AFT OUTBOARD BEAM B

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 416c)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 3.39 lbs
- 8) MASK HOLES PRIOR TO POWDER COAT
- 9) UNDEFINED FEATURES CONTROLLED BY CAD FILE D4895-7.SLDPRT

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	DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
	CHECKED	VS	DRAWING NO.	REV. B
	MFG. APPR.	JLM	D4895	SHEET 8 OF 9
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	OUTBOARD BEAM	NTS
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DETAIL B C8-5
C8-6
C8-7
C8-8

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APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	RF		
	CHECKED	VS	DRAWING NO. D4895	REV. B
	MFG. APPR.	JLM	SHEET 9 OF 9	
	APPROVED	HS	TITLE	SCALE
	DE APPR.	D3	OUTBOARD BEAM	NTS
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